ADDITIONAL FEE:

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R E M A R K S

The Office Action issued November 26, 2008, has been received and its contents have been carefully noted.

Claim 1 has been amended to incorporate the subject matter of claim 3, and claim 3 has been cancelled. Claim 1 has also been amended to recite that the contact surface of the smoothing device is pressed against the side edge of the plastic web to smooth and densify the thermoplastic synthetic material. This limitation is supported, inter alia, by the sentence bridging pages 9 and 10 of the application.

Claims 1, 2 and 4 have also been amended to render them clear and definite as required by 35 U.S.C. 112.

Claim 15 has been amended to remove the reference numerals.

Claims 5 - 15 and 17 - 20 have been withdrawn from consideration.

Claims 1 - 4, as previously presented, stand rejected under 35 U.S.C. 102(a) and 103(a) as being anticipated by, and unpatentable over, the European Patent No. EP 0,303,576 to Bressan, and the U.S. Patent Nos. 3,429,959 and 4,120,833 to Salhofer and Purvis et al., respectively. These rejections are respectfully traversed for the reasons given below.

The present invention relates to a method and "densifying" the edges of integral foam boards which are made of a foamed synthetic material. The surfaces of such a foam board are manufactured pore-free, and with great luster, by extrusion of the thermoplastic which may, for example, be hard PVC.

Due to the low density porous core, the board is extremely light.

When manufacturing the board, the edges must be trimmed laterally to achieve the desired board widths. However, this leaves an unsightly edge because the coarse porocity of the core is visible. The present invention provides a solution to this "problem".

As is best illustrated in Figs. 1 and 2 of this application, the side edges 21 of the integral foam board 20

are heated and cooled at the same time in a guide groove of a smoothing device 10. The smoothing device brings the side edge to at least the melting temperature of the thermoplastic synthetic material, to smooth and densify this material, while cooling the adjacent peripheral surface areas.

As shown in Fig. 2, the face area 11′ of the guide is heated by hot oil which flows through heating channels 15′, whereas the side areas 12′ and 13′, respectively, in the guiding groove 14′ are cooled by passing a cooling agent through the cooling channels 16′ and 17′.

The published European Patent Application No. 0 303 576 to Bressan discloses a method of forming "continuous, alveolate sheets or panels, in particular of polypropylene." The sheet is formed of a plurality of tubular sidewise joined members to form a continuous sheet 1 (Fig. 5) constructed of longitudinal canes with horizontal and vertical walls (Col. 4, lines 19, 20).

Figs. 6 and 7, and their accompanying description, disclose a method for joining sections 13 and 13′ to the side edges of the alveolate sheet, thereby closing the edges 4 and 4′ (Fig. 6).

The dictionary definition of "alveolate" is "pitted like a honeycomb". The word comes from "alveolus", which means a small cavity or pit, such as a cell or compartment of a honeycomb. Webster's New Collegiate Dictionary.

It will be understood that the alveolate board or panel to which Bressan refers is manufactured in a different manner, and has a substantially different structure, from the integral foam board produced by the method of the present invention. For example, with the board of Bressan, the profile webs and hollow spaces can be exactly and uniformly structured during manufacture. In contrast, with the present invention, only gas bubbles that are distributed irregularly and randomly are present in the board. The present invention has as its objective the densification and smoothing of the edges and is intended primarily to improve the optical appearance of the board so that framing thereof becomes unnecessary.

A "densification" of the alveolate board of Bressan would not be possible with Bressan's method, or with any other method, due to a lack of distributable plastic mass in the area of the trimmed edge. In Bressan, softening "at least to the melting temperature", as recited in applicants'

claim 1, would lead to a situation where the protruding profile webs melt and drip down to form a solid plastic mass. In addition, the adjacent board regions would cave in. "Heating" in terms of Bressan can, therefore, be effected only up to the softening temperature of the plastic. Only then is it possible to bend the protruding profile webs in the manner shown in Figs. 6 and 7 of Bressan.

If a person skilled in the art were to use the device shown in Figs. 6 and 7 of Bressan to heat the edges of an integral foam board, and were to experiment by varying the temperature, setting it higher or lower, applicants' method of densification and smoothing would not work. Such experimentation would not lead to dense and shiny edges because the method would either:

a) Close the bubbles insufficiently to produce a dense surface;

b) Promote an uncontrolled formation of new gas bubbles within the material; or

c) Otherwise smear the molten plastic material along the side edges.

Only direct and simultaneous cooling -- while the adjacent edge surface is held against the hot surface of the smoothing device -- will lead to the desired result, where the initiated foaming agent activation process is effective only close to the surface, in order to achieve the desired smoothing and densification, and is then stopped immediately such that after the smoothing device is removed, no new gas bubbles are produced.

In summary, the method for densification and smoothing of the side edge of an integral foam board is neither taught nor suggested by Bressan.

The secondary references cited by the Examiner -- namely, the patents to Salhofer and Purvis et al. -- do not supply the teaching that is missing from Bressan. Salhofer discloses a method for making a sheet of thermoplastic synthetic material and trimming the edges, but fails to teach the final step of smoothing and densifying the edges which forms the principal concept of the present invention.

Similarly, Purvis et al. teach a process for extruding a PVC foam board, but makes no mention at all of trimming or smoothing the edges.

Accordingly, claim 1, as amended, is believed to distinguish patentably over all of the cited references.

Claims q2 and 4 are dependent from claim 1 and recite further features in addition thereto.

This application is now believed to be in condition for immediate allowance. A formal Notice of Allowance is respectfully solicited.

Respectfully submitted,

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By MILDE & HOFFBERG, LLP

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